

The Pending Claims

Claims 1-27 and 32-39 are currently pending. Claims 1-27 and 32-39 are directed to a system for polishing one or more layers of a multi-layer substrate comprising (i) a liquid carrier, (ii) at least one oxidizing agent, (iii) at least one polishing additive that increases the rate at which the system polishes at least one layer of the substrate, and (iv) a polishing pad and/or an abrasive. Claims 36-39 are directed to a method of polishing a substrate with a polishing system containing, *inter alia*, certain recited polishing additives.

Amendments to the Claims

Claims 28-31 have been cancelled. No new matter has been added by way of these amendments. The precise amendments to the claims, as well as the pending claims as amended, are set forth on attachments hereto.

Summary of the Office Action

Claims 1-31 are subjected to a two-way restriction requirement and to an election of species for further prosecution. Claims 1-31 stand rejected under 35 U.S.C. § 103(a) as obvious over Sasaki et al. (i.e., U.S. Patent 5,770,095), Kaufman et al. (i.e., U.S. Patent 5,783,489), and Romberger et al. (i.e., U.S. Patent 5,230,833).

Discussion of Restriction Requirement

In response to the Office Action dated December 20, 2001, which sets forth a two-way restriction requirement, applicants confirm their telephonic provisional election, without traverse, of the invention of group I (i.e., claims 1-27) for further prosecution. Accordingly, the claims of group II, i.e., claims 28-31, have been cancelled.

Discussion of the Species Selection

The applicants affirm their selection of water as the liquid carrier species for further prosecution. Claims 1 and 3-27 read upon the elected species. Applicants understand that upon the allowance of a generic claim, applicants will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 C.F.R. § 1.141 (such as pending claim 2).

Discussion of the Obviousness Rejection

The obviousness rejection is respectfully traversed because the cited references (alone or in combination) do not disclose or reasonably suggest the invention as recited in the

pending claims. In particular, the combination of the cited references does not result in the claimed subject matter. In this respect, none of the cited references discloses or suggests a polishing system comprising a polishing additive that increases the rate at which the system polishes at least one layer of a multi-layer substrate containing a first metal layer and a second layer, as recited in each of the pending claims.

Sasaki et al. does not disclose a system for polishing a substrate comprising a polishing additive that increases the rate at which the system polishes at least one layer of a multi-layer substrate, as recited in the pending claims. Rather, Sasaki et al. discloses a polishing composition comprising a chemical agent (e.g., a thiol such as phosphonic acid, col. 3, line 49) for forming a protection film on a metal layer of a substrate. The chemical agent disclosed by Sasaki et al. has the same function as the "passivation film-forming agent" described in the instant specification (page 11, lines 5-21). Thus the disclosure of Sasaki et al. teaches against the use of "a thiol such as phosphonic acid" as an agent for increasing polishing rate, as recited in the pending claims.

Kaufman et al. does not satisfy the deficiency of Sasaki et al. with regard to the use of a polishing additive for increasing the removal rate of a layer of a multi-layer substrate. Specifically, Kaufman et al. teaches the use of phosphonic acid compounds to promote stabilization of the polishing slurry against settling, flocculation, and decomposition. Thus, contrary to the assertion of the Office, Kaufman et al. also teaches away from the claimed invention.

Romberger et al. discloses the use of amine polishing additives as rate accelerators for the removal of silicon layers. Romberger et al. does not teach or reasonably suggest the use of the amine additives as rate accelerators for any other type of substrate, in particular a multi-layer substrate-that includes a first metal layer and a second layer, as recited in the pending claims.

Applicants' claimed invention is not *prima facie* obvious in view of the cited references. Specifically, the cited references, neither alone nor in combination, disclose or reasonably suggest the invention as defined by the pending claims. Therefore, the claimed invention is patentable over the cited references, and the obviousness rejection should be withdrawn.

Conclusion

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.